

# SPARK GAP MARC

## APRS

**Digital radio** is coming to Johnson County. Saturday, August 21st, **James Smith-K9APR** will demonstrate the newest form of Amateur Radio communications, the **Automatic Position Reporting System**. Smith is the Indiana coordinator for APRS. This mode of communication uses packet technology to display your position anywhere in the country.

All you need is a GPS receiver, a TNC and a 2-meter radio. Sound confusing? Well, it can to the uninitiated, but after James Smith demonstrates APRS, Mid-State ARC members will be better prepared for this digital mode of our hobby. Join us Saturday at 8:00 AM and find out what all those digital Zeros and Ones add up to. **-W8ISH**

## Flat Rock Festival

*"Attention all stations, we have lost two walkers. Has anyone seen them? Over"* The two-meter radios crackled with life during the annual Flat Rock 7K Run. As the last of the 7K runners made their way across the finish line, race organizers issued a plea to find two of the walkers that were missing. Net control operator **Joe Rogers-KF9LQ** broadcast the alert, which brought a quick response from **Joe Vergara-KA9ZPA** and son **Cory-KB9OXU**. They identified two wayward walkers who decided to extend their two-mile walk into a four-mile marathon. **Hershel Saylor-WD9GMM**, operating bicycle mobile, had spoken with the women a few minutes earlier but didn't know they had been listed as Missing In Action.

That was just one of several problems the early morning communications team handled. The ham radio operators started the day at 6:30AM with a sausage and pancake breakfast at the Flat Rock fire station. By the 7:45 AM race time, event coordinator **Jack Parker-W8ISH** had assigned radio operators to key positions around

the racecourse.

Jack also established an **APRS** net to track the lead runners and key operating stations. A laptop computer map showing southern Shelby County kept track of the four Automatic Position Reporting Stations. **Bern-KC4CRH** was in the lead vehicle while **Bill-N9RSJ** stood by at the fire station. **Hershel-WD9GMM** followed the runners on his bicycle while **Jack-W8ISH** moved about the start-finish line coordinating the event. This was the first time APRS has been used for a MARC event.

Assisting with communications were **Al-WA9ZET**, **JR-KB9HSE**, **Dave-KB9LOT**, **Bob-N9SIU**, **Marilyn-N9TUK**, **Vernie-AA9LR**, **Chuck-KB9TEO** and **Dennis-KB9RWS**. **Matt-KB9UJE**, **Barbara-KB9NOG**, and **Dennis-KB9RRN** provided relief support. Our thanks to everyone who rolled out of bed early August 14th to help with the Flat Rock 7K run. **-W8ISH**

**Club Meeting**  
Saturday, August 21<sup>st</sup>  
Learn more about APRS!

August 1999

## The Mid-State Amateur Radio Club

### Membership

The Mid-State Amateur Radio Club is based in Franklin, Indiana. Membership is open to all amateur radio operators and other interested persons.

Club meetings are conducted on the third Saturday of each month in the training room of the Johnson County Emergency Operations Center at 1111 Hospital Road in Franklin, IN.

Membership dues are \$18.00 per year for full members. Other types of membership are available.

Amateur Radio Operator License testing is offered following the club meeting during the months of March through November.

The club maintains an open repeater on the 2-meter band at 146.835 MHz. Each full member has access to the repeater and autopatch.

Membership dues payment and change of address should be mailed to the club treasurer at the address listed below.

### Newsletter

The Spark Gap is the monthly club newsletter. Articles and information that would be of interest to the club members are welcome. Information may be submitted by E-mail or by mailing to the club address listed below.

#### **Editor**

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#### **Constitution**

Dave Daily  
(KB9LOT)

JR Osborne  
(KB9HSE)

Dave Wendt  
(KA9OOH)

#### **Technical**

Vernon Gill  
(N9QBO)  
Charlie Sears  
(N9MEW)  
Dennis McKendree  
(KB9RWS)  
Steve Benson  
(N9NZI)  
Hershel Saylor  
(WD9GMM)

#### **Field Day**

Jack Parker  
(W8ISH)  
JR Osborne  
(KB9HSE)  
Larry Turner  
(KB9PWN)  
Al Soltis  
(WA9ZET)

#### **Activities**

Jack Parker  
(W8ISH)  
Bob LaGrange  
(N9SIU)  
Other  
Appointments  
Pending

#### **Membership**

Larry Turner  
(KB9PWN)  
Bill Goodall  
(K9DBY)  
Other  
Appointments  
Pending



**MARC, PO Box 836, Franklin, IN 46131**

A SPECIAL SERVICE CLUB OF THE ARRL



## CODE CLASSES?

Don't miss a good thing!

This is an interesting time to be in the hobby of amateur radio. With the anticipated license restructuring bearing down on us, and the increase in sunspot activity bringing HF band openings daily. There is more incentive than ever for Technician licensees to consider upgrading to take advantage of the increased privileges and expected "grandfathering" to General class privileges. Casual listening will bear these facts out. With those facts in mind, there is more talk on the local VHF and UHF repeaters of wanting to master "The Code" enough to gain access to the coveted HF bands.

The common problem is experienced by many of these same people is that they have a hard time either finding the time or the motivation to buckle down and (as they say) "Just Do It". Many people reading this are probably nodding their heads in agreement and muttering "yeah!" to themselves. It's no secret that like many things in life, there is a cost associated with anything as \*cool\* as HF operation (not counting the equipment).

Here's where this article comes in: How many Technicians want to be able to ditch the derogatory term "No-Code Tech"? How many of you desire, TRULY desire, to get the code down cold so that they can waltz in, take the dreaded

test, and leave the VE team in awe at how they aced the test so unequivocally?

OK, how many are willing to walk in quietly, concentrate for 5 minutes and successfully copy a minimum of 25 characters in a row, or correctly answer at least 7 out of 10 questions; passing the test to the congratulatory remarks of the VE's in attendance? How many want the former scenario but would settle for the latter? Would you?

Are you willing to invest the time and effort to attend a structured class on "The Code"? Are you willing to invest some personal time outside of class to practice? Are you interested in just such a class? If you are, let us know! The feasibility and demand for just such a class is now being explored. If this sounds like something you'd be interested in doing, let us know.

You can express your interest by calling **Rick Reneau (KB9NDF)** at (317) 780-1803 or emailing him at [kb9ndf@arrl.net](mailto:kb9ndf@arrl.net). If there is sufficient interest we can get right to work forming the class and getting it underway. Don't wait, there is no time like the present and the personal satisfaction (and bandwidth) of upgrading can make up for the time spent.

-KB9NDF

## Band Contest

**Bob LaGrange-N9SIU**, is looking for a few good men...and women. Saturday, September 25th, **Greenwood High School** will again host a regional high school band contest. Bob needs over a dozen amateur radio operators to help with event communications. Last year, the club was commended by school and police officials for our proficiency in handling traffic, parking and other problems. Bob says it will be a long day, but if

enough volunteers respond, we can keep the fatigue factor to a minimum for everyone. As a bonus, all radio communicators will be entertained by dozens of the best high school marching bands in the Midwest. "We oughta pay to work this one." A sign-up sheet will be available at the August meeting. Participation in events like this one is what makes the Mid-State Amateur Radio Club one of the best in the country.

-W8ISH

## ARRL not in the credit card business

Reprinted from *The ARRL Letter*

Some League members recently have reported receiving solicitations from telemarketers for a credit card offering to radio amateurs. The ARRL is not involved with these solicitations nor has the League sold members' names, addresses, or telephone numbers to telemarketing organizations

# The Automatic Position Reporting System

## Don't Miss the Evolution of Packet!

More commonly known as APRS, this digital mode of communications is bringing a new excitement to the amateur radio hobby. By sending an unconnected packet of data using the AX.25 protocol. APRS uses bandwidth in a more efficient manner than a normal packet radio communication.

Setting up a station for APRS is a fairly easy task. A full setup may consist of a radio, TNC, GPS and a computer running the APRS software. A simpler setup for position tracking is a radio, TNC and GPS.

A GPS (Global Positioning System) receiver will provide your exact latitude and longitude. This position information and your callsign will be transmitted along with any optional information you may wish to send. This can include info about your stations' power, antenna (height, gain and pattern), an id symbol (truck, bike, house, etc.) and a brief one-line comment. When this information is sent to the TNC (Terminal Node Controller), it is converted from its digital form to audio tones ready for transmission.

On the receiving end, the audio from the receiver is converted from the audio tones back to a digital format by the TNC and sent to the computer running the APRS program. A symbol (which you selected) now appears on the map to indicate your position. Any optional information that you sent is also available for display.

To increase the usefulness of APRS, digipeaters are used to increase the range of the transmission. By placing special callsigns such as RELAY and WIDE in the path your message will be given maximum coverage. A RELAY

station (the default setting) is any station (usually a base station) that will digipeat any other station. This is very beneficial to low-power portable and mobile stations. A station known as a WIDE will digipeat packets that are addressed to either their specific callsign or to the generic call of WIDE. These are stations that are setup for coverage of a wide area. There are well-established ways to address your packet, such as RELAY, WIDE, WIDE. There are other paths that must not be used due to the tremendous amount of useless digipeating that would take place, such as RELAY, WIDE, RELAY.

There are also gateways that relay the packets to and from the Internet. You can connect to an APRS server via TCP/IP and send and receive APRS packets without a TNC or radio.

APRS also interfaces easily with weather stations to provide real-time weather data. This has great value during a SKYWARN net. It provides wind speed and direction, temperature, and rainfall amounts. This weather data can also be entered manually by a station that does not have automatic weather station hardware.

The APRS software will run on just about any computer. (Yes, even an old 286). The newer version for Window is much easier to learn and use, though. You will find the software at [WWW.TAPR.ORG](http://WWW.TAPR.ORG).

The TAPR site also has an e-mail list that connects you with many active APRS users. To join the list, send a message to [LISTPROC@TAPR.ORG](mailto:LISTPROC@TAPR.ORG). In the body of the message place **subscribe your name** (substitute your name for **your name**).  
—WD9GMM

Little Girl: "Mom, what is that you're putting on your face?"

Mother: "It's cold cream to make me beautiful!"

Little Girl: "It doesn't work very well does it?"

## CQ CQ CQ from W1AW

Cory Vergara, KB9OXU

MARC member **Cory Vergara, KB9OXU** recently had the pleasure of working the ether from **W1AW**, the Hiram Percy Maxim memorial station, at the ARRL headquarters in Newington, CT.

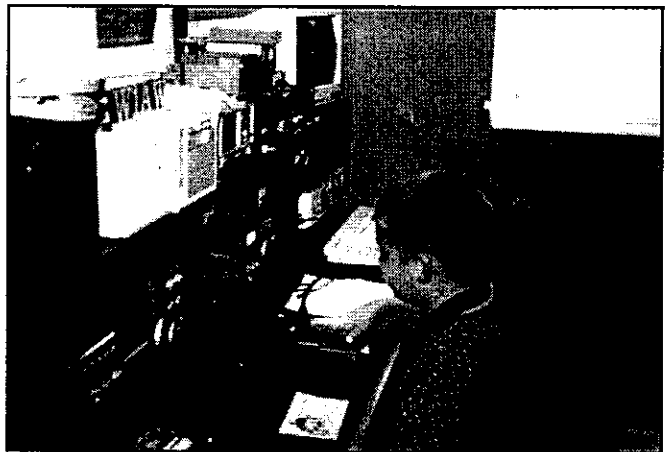
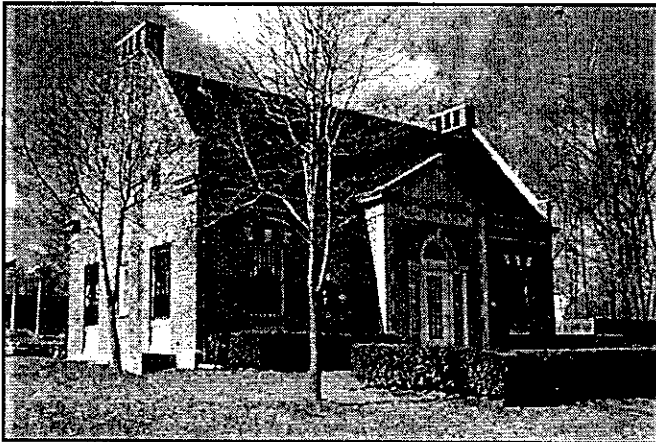
**W1AW**, the Headquarters Amateur Radio station of the American Radio Relay League, is a living memorial to the League's cofounder, Hiram Percy Maxim.

When Cory left with his Grandparents for a 10-day trip to Hartford, his father **Joe Vergara, KA9ZPA**, said, "Why don't you visit W1AW while you are in the area?" With a little persuading of family members, Cory did just that!

His first reaction of the W1AW shack? "WOW!" He was, "really impressed with all the radio equipment." He said, "There was a lot of equipment in glass cases. Like in a museum."

During his visit, there were not a lot of visitors to the shack. The control operator, **Joe Garcia, NJ1Q**, gave Cory a tour and after verifying his license status invited him to make use of the station equipment. Since the visitor operating time was nearing an end, he was not able to make very many contacts. But, he now can say that he has been on the air from W1AW. As eleven-year old Cory says, "Now I've done something in ham radio that my dad hasn't!"

Since receiving his license in November of 1996, Cory has become well known in the **Mid-State Amateur Radio Club**. You can hear him on the 146.835 club repeater. "Sometimes you'll find him on the HF bands" says his mother, **Karen Vergara, N9KMH**, "He likes to jump in there when he hears someone he knows!"



## Nebraska hams aid in fire response

Hams in Buffalo County, Nebraska, helped local authorities the evening of July 12 when a fire broke out at a lumberyard in Kearney. **EC Danny Baer, KA0DBK**--who's also a fireman--put out a call for additional ARES volunteers, then assisted the Kearney Police Department by directing traffic. Other ARES members were put to work on traffic and crowd control details. A Salvation Army team provided food and water to the emergency workers on the scene. Five ARES members spent more than five hours at the scene. The lumber yard was destroyed along with three other businesses. Baer recommends planning ahead and training for emergencies, then remaining prepared. "Have your emergency bag ready and extra batteries charged, and your H-T ready," he concludes. "You never know when an emergency might happen."

Reprinted from **The ARRL Letter**

# Universal Licensing System

Say hello to the ULS! The FCC's Universal Licensing System becomes a reality for the Amateur Service. The FCC said August 13 that the ULS would be out of service until August 16<sup>th</sup> to prepare for implementation.

The ULS ushers in an era of electronic, interactive filing and handling of Amateur Radio applications and marks a major change in the way hams will deal with the FCC. It also means the demise of the familiar paper FCC Form 610 series in favor of the "universal" Form 605. Once registered, amateurs filing applications with the FCC under the ULS will use Form 605 for all purposes except club station applications.

Before using the ULS to file an application, renew or modify a license, or apply for a vanity call sign, all amateurs must register. When registering, individuals eligible to hold a Social Security Number must provide this number—which the FCC refers to as a Taxpayer Information Number or TIN. This requirement is a mandate of Congress, not of the FCC. All hams must be registered in the ULS to do business with the FCC.

To register electronically, visit <http://www.fcc.gov/wtb/uls/> and click on "TIN/Call Sign Registration." A paper Form 606 is available at <http://www.fcc.gov/formpage.html> or by calling 800-418-FORM (3676). One big advantage only to on-line registrants is that the ULS application system checks for errors before data are submitted.

Applicants first register their Social Security Number (or TIN), then enter a call sign. Applicants also must select a password to identify themselves in future, private transactions with the FCC database. A valid password can be from 5 to 30 alphanumeric characters and is case-sensitive. For additional security, applicants also specify a personal identifier. The FCC and ARRL recommend that applicants *not* use their Amateur Radio call signs as a passwords or identifiers.

Registrants receive a nine-character Licensee Identification Number. Amateurs may use this number in place of a Social Security Number in future dealings with the FCC. Those filing a paper ULS Form 606 by mail will not receive an acknowledgement from the FCC. Paper filers can obtain their FCC-generated Licensee ID Number from ULS Technical Support at 202-414-1250.

Applications for new licenses or upgrades will continue to be filed through a Volunteer Examiner Coordinator. VECs will use a special NCVEC Form 605—a variation of Form 605—to file with the FCC for test sessions.

Starting August 16, hams already registered in the ULS may file applications using the new FCC Form 605 electronically at any time of day, seven days a week. FCC Form 605 will be used for license renewals, modifications, cancellations, application withdrawals and amendments, as well as requests for a vanity call sign, duplicate license, change of address or other clerical license modification. Visit the Wireless Telecommunications Bureau ULS page, <http://www.fcc.gov/wtb/uls> and click "Connecting to ULS" for information on accessing the ULS system. Accessing the ULS database requires a telephone modem. A toll-free number, 800-844-2784, connects users to the FCC's Wide Area Network.

Among other things, the ULS features a renewal reminder sent 90 days prior to a license's expiration date. The ULS also simplifies the process of submitting fees to the FCC. The FCC said it also anticipates that the ULS will be capable of accepting credit card payments on-line "in the near future."

For more information, visit the FCC's ULS page, <http://www.fcc.gov/wtb/uls>.

Reprinted from *The ARRL Letter*

FCC's Universal  
Licensing System  
becomes a reality  
for the Amateur  
Service

A gorilla walked into a drugstore and ordered a sundae. He put a \$10.00 bill on the counter to pay for it. As the clerk was making change, he thought, "Surely a gorilla doesn't know much about money," so he handed the animal a one-dollar bill in change.

Finally the clerk's curiosity got the best of him. He said, "We don't get many gorilla in here."  
"No wonder," the gorilla replied, "at nine dollars a sundae!"

# The Future of Amateur Radio

Matthew Payne, KB9UJE

Most of us have pondered the future of our hobby from time to time. We hear reports of dwindling numbers, decreasing license renewals, and the slow decline of activity at test sessions. Central to this issue is Amateur Radio's seeming inability to attract new and diverse membership. I wish to explore several avenues for solving this recurring issue so that the hobby that all of us know and love will continue to grow and expand during these critical times.

Amateur radio has much to offer the new enthusiast. Concepts such as teamwork, accountability, and personal growth are interwoven into the core of our service. Clubs such as ours also provide a wealth of opportunity for new amateurs to gain knowledge and experience in many areas. Amateurs also break down barriers present between countries and cultures. We explore through one of mankind's most common inherent traits, the need to communicate.

How do we begin the process of securing the next generation of America's "hams"? We as a hobby and more importantly, we as a club, need to create an atmosphere where new amateurs feel both welcome and accepted. Each new member to the club will bring with him new ideas and new ways of solving issues that occur during the year. Both need to be encouraged. It is likely that each new member will forever change the direction of the club in some small way. This is not only necessary, but it insures that the club will continue

to grow and prosper in the years ahead. In that way, we as members must both teach and learn from new amateurs. Their ideas, even if different from our own, weigh equally on the future of our hobby.

I would request a commitment from each club member to recruit one new member into the club by Dec 31, 2000. Those that cannot can still contribute by "budding" themselves with a new member or potential member, and offering advice and guidance on the hobby to the new ham. A buddy could introduce the new member to other hams on the air, and help to alleviate any anxiety to transmit for the first time. In this way, new members know they are "part of the group".

We also must allow new amateur radio operators to hold responsibility in the club and in all aspects of the hobby.

Alienation of new members due to age or experience will only lead to the downfall of the hobby and the group. Only by allowing others to fully participate do we unlock the potential for each new member to achieve his place in the hobby. Please remember that by allowing others to experience amateur radio in its fullest, and by trusting others with responsibility, will we insure a full future for the Amateur Radio Service.

Amateur radio today is alive and well. Working as a team, we can see amateur radio continue through the twenty first century and beyond.

**Amateur radio  
today is alive  
and well.**

A farmer and his wife were attending the county fair. The farmer was fascinated by the airplane rides offered by a local pilot and asked the pilot as to the price of a ride. The pilot knew that the farmer was known as a tightwad with his money, so he thought he would have a little fun.

"Rides are usually \$30.00. However, I'll make you a special deal. If you and your wife can ride without making a sound, the ride will be free."

"Agreed!" said the farmer, happy to hang onto his money.

During the flight the pilot did every maneuver he could, trying to frighten the farmer. This was met with no success. The farmer never let out a sound.

As he was landing, he said, "I want to congratulate you for not making a sound. You're a brave man!"

"Well, that may be so," said the farmer, "but I did almost let out a yell back there when my wife fell out!"

## ADI AT-600HP

Equipment Review by Matthew Payne, KB9UJE

### Manufacturer

ADI Communications  
480 Apollo - Suite E  
Brea, CA 98281  
(714) 257-0300

### Price

(AES) \$259.99  
(HRO) \$299.95

### Web site

<http://www.adi-radio.com>

The ADI AT-600HP is a dual band handheld transceiver that incorporates many user friendly features into a small, affordable package. Some of the features include:

- Alphanumeric Display
- 120 / 200 channels
- CTCSS tone encode / decode included
- Wide Band Receive (130-170 416-499 800 900)
- Dual Band simultaneous monitoring
- X-Band repeat
- User Friendly Menus
- Adjustable Power Level (5.0/2.0/.35) (5.0/1.8/.35)

### MY LIKES

The ADI-600 is a small, easy to use handheld that includes features that I desire in day to day operation. It is perfect for light handheld use, and its ample memory space lets you store many local and distance frequencies. The alphanumeric display insures that when the time comes to us those distant repeaters, you won't forge which one is which.

### MY DISLIKES

Performance of the battery pack supplied with the radio leaves much to be desired. One can expect 1.5 to 2 hours of normal usage before recharging becomes necessary. The small size of the radio also makes holding the radio uncomfortable during long QSO's at high power. This seems to be more of a design problem than anything, and I don't think there is any workable alternative for ADI to explore that wouldn't drastically increase the transceiver's size.

### OVERALL

For light uses around the yard or at special events, the ADI is second to none. It is packed with features sure to make it compatible both with existing and future repeaters. If you are looking for good handheld for that next outing, the ADI might just fit the bill.

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